

CHATGPT: A NEW ERA OF PROGRAMING

Let's find out and discuss Pros and Cons of Using a break through Large Language Model for Programming!



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ChatGPT

LARGE LANGUAGE MO



Outline

- Introduction to ChatGPT
- Use of ChatGPT various applications
- Google Code Red and Microsoft Investments
- Potential uses of ChatGPT in industry and research
- Potential Misuses of ChatGPT
- What to do next?
- **Debate!**

Introduction to ChatGPT

- ChatGPT is a large language model by OpenAI.
- It uses a transformer architecture, which is a type of neural network, well suited for natural language processing (NLP) tasks.
- *ChatGPT (Generative Pre-trained Transformer)* is trained on a massive dataset of text till 2021.
- It can generate human-like text in a many contexts.

Fun fact: Market valuation of Open AI is jumped from \$14B USD to \$29B USD in last 3 weeks

ChatGPT is Open Source

- ChatGPT is open-sourced
- It can be easily integrated into various applications.
- It is the most advanced AI language model
Microsoft, an investor of \$1B in OpenAI, is going to integrate ChatGPT with its Bing Search
- Expectation of meaningful answers to our queries, instead of link of websites

Google Code Red

- Google acquired DeepMind in 2019, to integrate AI
- Google issued a Code Red to his employs to defeat ChatGPT
- A Healthy Competition is expected to bring more fruit for the customers

Use of ChatGPT in NLP

- Chatbots: ChatGPT can be used to generate human-like responses in a conversation, making it a powerful tool for creating conversational agents.
- Language Translation: ChatGPT can be fine-tuned for language translation tasks and can generate translations that are comparable to those produced by human translators.
- Text summarization: ChatGPT can be used to condense a large amount of text into a shorter summary, which can be useful in news articles, research papers, and more.

Uses of ChatGPT in Programming

- Code generation: ChatGPT can be used to generate code
- Code can be generated in all famous language such as Python, Ruby
- Code contains comments for easier understanding
- Ideal for implementing algorithms like merge sort
- Can implement models like ARIMA and LSTM along with examples
- Note: Unable to run the multiple models together e.g: *Take a time series, use ARIMA on it. On the output use LSTM to generate forecast*

Misuses of ChatGPT in Programing

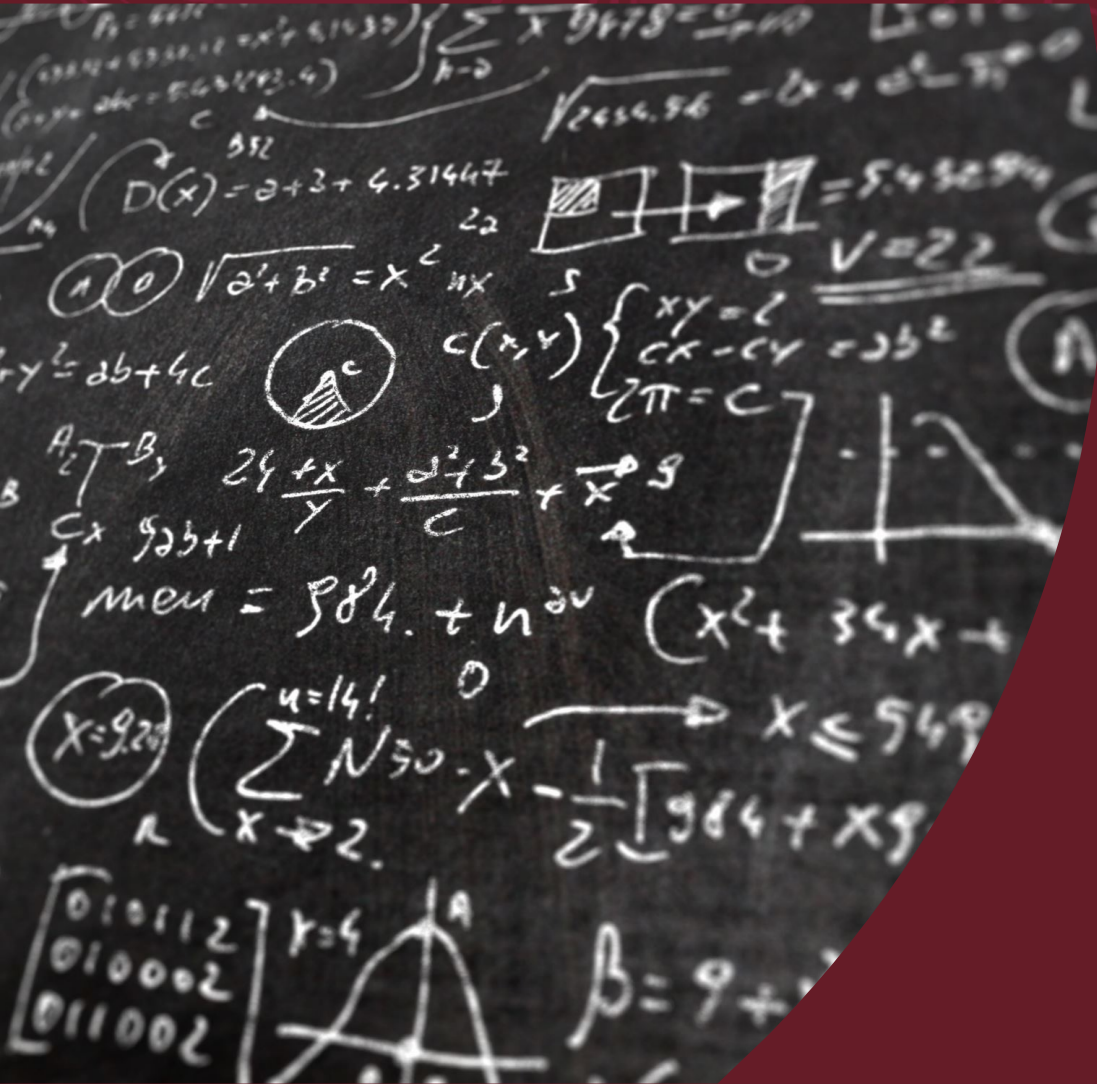
- Cheating: ChatGPT can be used to generate answers for programming assignments
- Plagiarism: ChatGPT can be used to generate code that appears to be written by the student, which can be used to plagiarize work
- Misrepresentation of skills by a candidate.
- Misuse of resources: ChatGPT can be used to generate code that can be used to perform actions that are not allowed e.g., scraping data from a website

Two Applications, we are working on

- Automated Software Development
 - Currently 26.9 Million software developer
 - Would need more in future for Gaming Industry, Metaverse, and mission to Mars
 - Smart to use ChatGPT and LLVM tools for automatic generation of software
 - For a start-up idea, check our paper:

Automation of Slides Generation for Teachers for School/University

- A Good amount of teacher is spent for slides preparation
- In this venture, we are automating this process.
- Teacher will just provide:
 - Topic: (eg. History of Human Kind)
 - Audience (UG Students/ 5th grade students)
- Slides generated, that teacher can present after proofreading



Automation of Slides Generation for Teachers

How slides creation will work?

- Selection of Topic by the teacher (and the text book)
- Providing the topic to OSE (OneScreen Extension)
- OSE will generate the topic outline from ChatGPT
- On each bullet, 2-3 slides will be made
- Teacher will refine the contents



Hi ChatGPT, I am prof. Sohail, going to deliver history lecture to my undergraduate students.



Hello Professor Sohail, how can I assist you with your history lecture?



Generate outline on the topic "History of mankind."



I. Introduction

A. Definition of the history of mankind

B. Importance of studying the history of mankind

II. Early Human History

A. Evolution of early humans

B. Development of human societies

C. Early human cultures and civilizations



Write the outline for "History of mankind" lecture for 5th grade students



I. Introduction

- Brief overview of the topic
- Importance of studying history

II. Early Humans

- Evolution of humans
- Stone Age and its advancements
- Hunter-gatherer societies

Contents is simpler ands more appealing for kids

Definition of the history of mankind

The history of mankind refers to the study of the past events, developments, and experiences of human societies, cultures, and civilizations.

It encompasses the evolution of early humans, the development of human societies, the rise and fall of ancient cultures and civilizations, major historical events, and the impact of human actions on the world.



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Build next-gen apps with OpenAI's powerful models.

Access GPT-3, which performs a variety of natural language tasks, Codex, which translates natural language to code, and DALL·E, which creates and edits original images.

GET STARTED

READ DOCUMENTATION

Table of Contents

Getting Started

- Hello World! example
- Bullet slide example
- `add_textbox()` example
- `add_picture()` example
- `add_shape()` example
- `add_table()` example
- Extract all text from slides in

Previous topic

Installing

Next topic

Working with Presentations

Useful Links

- python-pptx @ GitHub
- python-pptx @ PyPI
- Issue Tracker

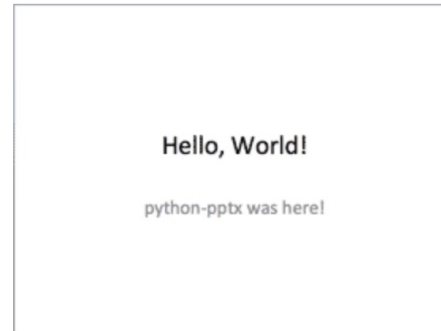
Quick search

Getting Started

A quick way to get started is by trying out some of the examples below to

The [API documentation](#) can help you with the fine details of calling signa

Hello World! example



```
from pptx import Presentation

prs = Presentation()
title_slide_layout = prs.slide_layouts[0]
slide = prs.slides.add_slide(title_slide_layout)
title = slide.shapes.title
subtitle = slide.placeholders[1]

title.text = "Hello, World!"
subtitle.text = "python-pptx was here!"

prs.save('test.pptx')
```

App to Ppt

1

Enter Topic

2

Enter Target
Audience

3

Enter lecture
Duration

On this info ChatGPT will generate text contents that will be converted to ppt using <https://python-pptx.readthedocs.io/>

Automated Software development using AI

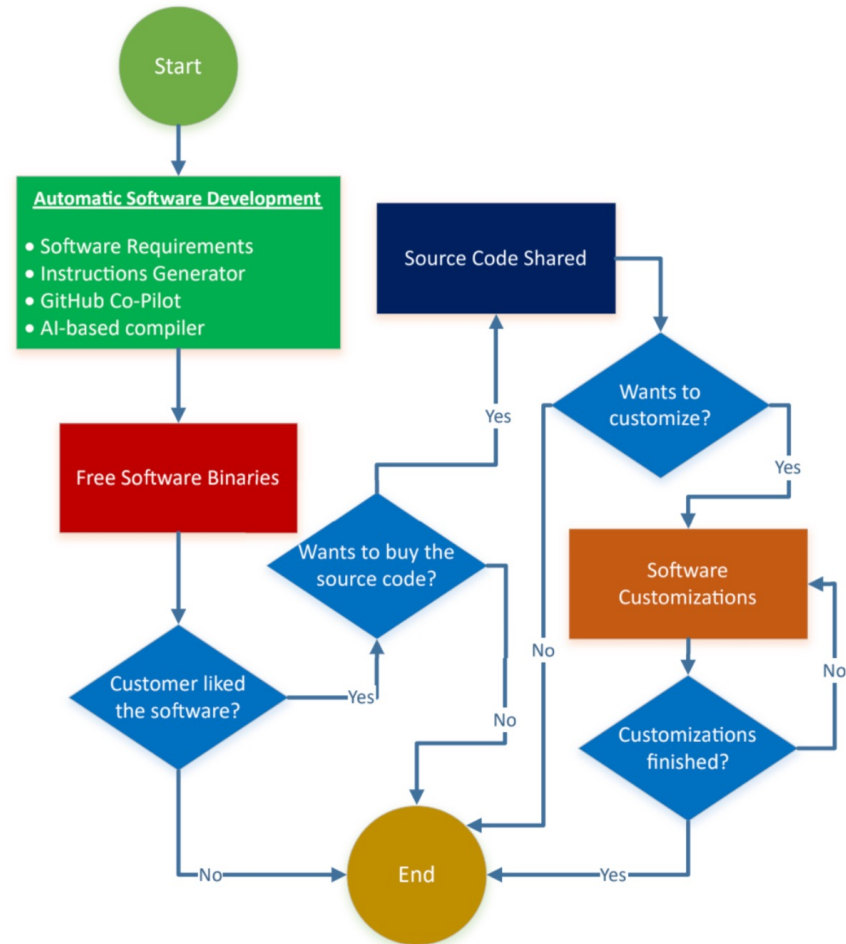
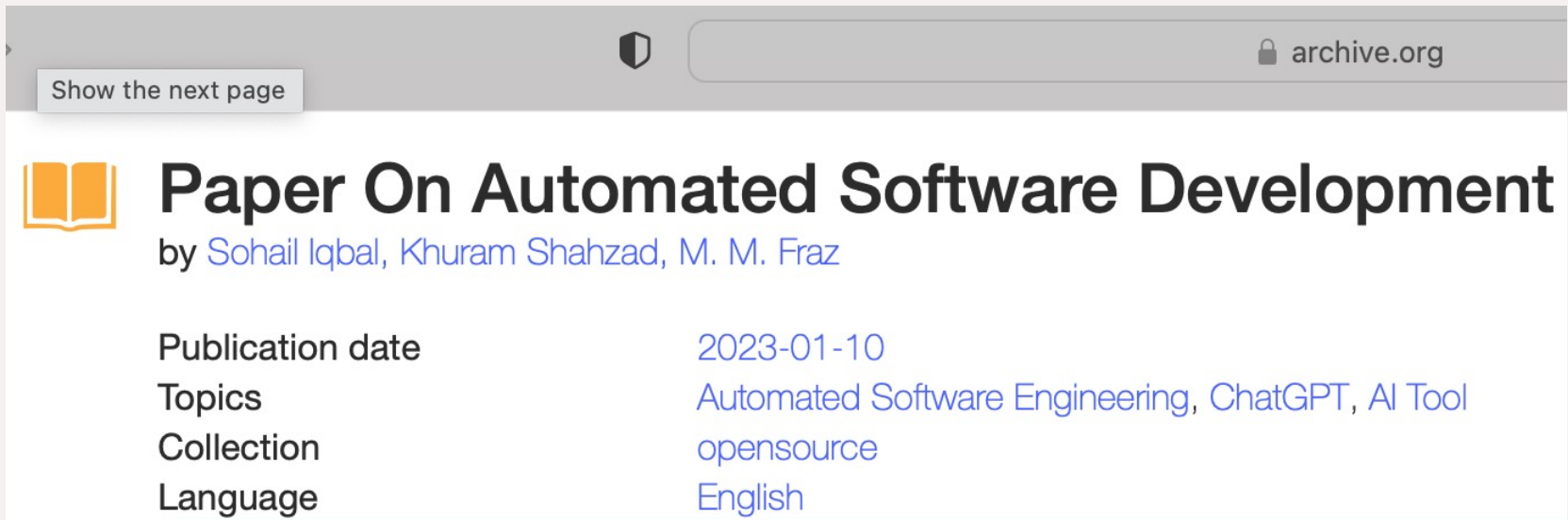


Fig. 2. High level business model of our proposed framework.

For more details on this, for a start-up

- <https://archive.org/details/paper-on-automated-software-development>



The screenshot shows a web browser window with the address bar displaying 'archive.org'. A button labeled 'Show the next page' is visible in the top left. The main content area features a yellow book icon next to the title 'Paper On Automated Software Development' in large black font. Below the title, the authors 'Sohail Iqbal, Khuram Shahzad, M. M. Fraz' are listed in blue. A table-like layout provides additional details:

Publication date	2023-01-10
Topics	Automated Software Engineering, ChatGPT, AI Tool
Collection	opensource
Language	English

Thinking Loud

- GhatPGT and AI tools can take life forms to Mars and Andromeda sooner than expected
- Carbon life forms could be very primitive compared to Silicon life forms
- Singularity is closer

What to do next?

- We need to embrace the change (Chat GPT) and see how to build on this.
- It may be used for creating the misinformation, and hate speech etc. How to minimize the damage for such a case e.g. by spreading the awareness (we did for deep fake)
- It should be taught in depth (for its integration in apps etc) in Adv. Topics in Computing + few theses on it.

The top of the slide features a decorative border with a repeating pattern of semi-circles and concentric arcs in a dark red color.

Let's debate!

Thanks for listening!

Announcement

- We have a project for automatic content creation for K-12 education.
- If you are interested in a paid FYP/MS-thesis, drop your CV at:

sohail.Iqbal@seecs.edu.pk

Thanks for Watching

For more info, please visit:

<https://chat.openai.com/>